

INTERFERENCE SEARCH

EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L2	1	(prime number private public key generator random identities equality).clm.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2007/03/18 20:54
L3	1	(prime number private public key generator random verifier equality).clm.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2007/03/18 20:54
L4	1	(prime number private public key security parameter prover verifier).clm.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2007/03/18 20:54
L5	1	(authenticat\$3 identities public\$3 uniformly non-negative).clm.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2007/03/18 20:55

EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	1236	(380/30).CCLS.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/03/18 20:56
L2	1342	(380/28).CCLS.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/03/18 20:56
L3	1666	(713/168).CCLS.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/03/18 20:56
L4	3889	L2 L3 L1	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/03/18 20:56
L5	3107	L4 and @ad<"20030826"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/03/18 21:59
L7	625	L5 and (prime near2 number)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/03/18 20:58
L8	357	L7 and ((private near2 key) and (public near2 key))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/03/18 21:05
L9	779	(380/270).CCLS.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/03/18 21:05
L10	557	L9 and @ad<"20030826"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/03/18 22:20

EAST Search History

L11	3580	L10 or L5	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/03/18 22:05
L13	163	L11 and (zero near2 knowledge)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/03/18 22:19
L14	30	L13 and prover and verifier and (prime near2 number)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/03/18 22:20
L16	20	L14 and (private near2 key) and (public near2 key)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/03/18 22:32
L17	1	L16 and equality	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/03/18 22:27
L18	2	("4995082").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/03/18 22:27
L20	4	L16 and optical	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/03/18 22:32
L21	8	(prime adj number) same identit\$3 same (private adj key) same (public adj key) same generator	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/03/18 22:55
L23	1	("2005/0058288").URPN.	USPAT	OR	ON	2007/03/18 22:57
L24	3	authentica\$3 same identit\$3 same parallel same prover same verifier	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/03/18 23:01

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L25	3	identit\$3 same parallel same prover same verifier	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/03/18 23:01
L26	4	parallel same prover same verifier	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/03/18 23:04
L28	185	prover same verifier	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/03/18 23:04
L29	140	L28 and @ad<"20030826"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/03/18 23:04
L30	27	L29 and (public adj key) and (private adj key) and (prime adj number)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/03/18 23:05
S1	90	((("20050058288") or ("5581615") or ("7184547") or ("6078909") or ("6011848") or ("6044463") or ("20010044895") or ("20040123156") or ("20030203756") or ("20040117630") or ("6889322") or ("6978372") or ("20040111617") or ("20060112273") or ("6154841") or ("20050278536") or ("20060195692") or ("6962530") or ("20030115464") or ("20040133781") or ("20050220298") or ("6829356") or ("7047408") or ("5245657") or ("6058476") or ("6301660") or ("5345506") or ("20040073795") or ("5963649") or ("6076163") or ("5761309") or ("6952476") or ("20050114662") or ("20050265550") or ("4932056") or ("6320966") or ("6937728") or ("6108783") or ("6226383") or ("6226383") or ("5590199") or ("6216231") or ("6216231") or ("6256741") or ("5757918") or ("6327659") or ("6332192") or ("20010005887") or ("7174459") or ("20050005119") or ("").pn.)).PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/03/18 20:56
S2	1236	(380/30).CCLS.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/03/15 15:03
S3	1342	(380/28).CCLS.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/03/15 15:21

EAST Search History

S4	1666	(713/168).CCLS.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/03/15 15:21
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Relevance scale

1 [Some facets of complexity theory and cryptography: A five-lecture tutorial](#)



Jörg Rothe

December 2002 **ACM Computing Surveys (CSUR)**, Volume 34 Issue 4

Publisher: ACM Press

Full text available: pdf(2.78 MB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)
[review](#)

In this tutorial, selected topics of cryptology and of computational complexity theory are presented. We give a brief overview of the history and the foundations of classical cryptography, and then on to modern public-key cryptography. Particular attention is paid to cryptographic protocols and a problem of constructing key components of protocols such as one-way functions. A function is one-way if it is easy to compute, but hard to invert. We discuss the notion of one-way functions both

Keywords: Complexity theory, interactive proof systems, one-way functions, public-key cryptography, zero-knowledge protocols

2 [On randomization in sequential and distributed algorithms](#)



Rajiv Gupta, Scott A. Smolka, Shaji Bhaskar

March 1994 **ACM Computing Surveys (CSUR)**, Volume 26 Issue 1

Publisher: ACM Press

Full text available: pdf(8.01 MB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Probabilistic, or randomized, algorithms are fast becoming as commonplace as conventional deterministic algorithms. This survey presents five techniques that have been widely used in the design of randomized algorithms. These techniques are illustrated using 12 randomized algorithms both sequential and distributed—that span a wide range of applications, including: primality testing (a classical problem in number theory), interactive probabilistic proof systems ...

Keywords: Byzantine agreement, CSP, analysis of algorithms, computational complexity, dining philosophers problem, distributed algorithms, graph isomorphism, hashing, interactive probabilistic proof systems, leader election, message routing, nearest-neighbors problem, perfect hashing, primality testing, probabilistic techniques, randomized or probabilistic algorithms, randomized quicksort, sequential algorithms, transitive tournaments, universal hashing

3 [Proofs that yield nothing but their validity or all languages in NP have zero-knowledge proc](#)



systems

Oded Goldreich, Silvio Micali, Avi Wigderson

July 1991 **Journal of the ACM (JACM)**, Volume 38 Issue 3

Publisher: ACM Press

Full text available: pdf(3.04 MB)

Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

Keywords: NP, cryptographic protocols, fault tolerant distributed computing, graph isomorphisms, interactive proofs, methodological design of protocols, one-way functions, proof systems, zero-knowledge

4 Multiagent systems and electronic markets track: Practical secrecy-preserving, verifiably correct and trustworthy auctions



D. C. Parkes, M. O. Rabin, S. M. Shieber, C. A. Thorpe

August 2006 **Proceedings of the 8th international conference on Electronic commerce: The e-commerce: innovations for conquering current barriers, obstacles and limits to conducting successful business on the internet ICEC '06**

Publisher: ACM Press

Full text available: pdf(507.45 KB)

Additional Information: [full citation](#), [abstract](#), [references](#)

We present a practical system for conducting sealed-bid auctions that preserves the secrecy of bids while providing for verifiable correctness and trustworthiness of the auction. The auctioneer accepts all bids submitted and follows the published rules of the auction. No party receives any useful information about bids before the auction closes and no bidder is able to change or repudiate his bid. Our solution uses Paillier's homomorphic encryption scheme [25] for zero knowledge proofs of .

5 Authentication and integrity in outsourced databases



Einar Mykletun, Maithili Narasimha, Gene Tsudik

May 2006 **ACM Transactions on Storage (TOS)**, Volume 2 Issue 2

Publisher: ACM Press

Full text available: pdf(531.47 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

In the Outsourced Database (ODB) model, entities outsource their data management needs to a third-party service provider. Such a service provider offers mechanisms for its clients to create, update, and access (query) their databases. This work provides mechanisms to ensure data integrity and authenticity for outsourced databases. Specifically, this article provides mechanisms that assure the querier that the query results have not been tampered with and are authentic (with respect to the ...

Keywords: Outsourced databases, authentication, data authenticity, data integrity, integrity, signature aggregation, storage

6 Credentials: Direct anonymous attestation



Ernie Brickell, Jan Camenisch, Liqun Chen

October 2004 **Proceedings of the 11th ACM conference on Computer and communications security CCS '04**

Publisher: ACM Press

Full text available: pdf(314.67 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

This paper describes the direct anonymous attestation scheme (DAA). This scheme was adopted by the Trusted Computing Group (TCG) as the method for remote authentication of a hardware module called Trusted Platform Module (TPM), while preserving the privacy of the user of the platform that contains the module. DAA can be seen as a group signature without the feature that a signature can be opened, i.e., the anonymity is not revocable. Moreover, DAA allows for pseudonyms, i.e., for

signat ...

Keywords: anonymous credential systems, cryptographic protocols, integrity based computing
privacy, trusted computing

7 Practical multi-candidate election system



Olivier Baudron, Pierre-Alain Fouque, David Pointcheval, Jacques Stern, Guillaume Poupard

August 2001 **Proceedings of the twentieth annual ACM symposium on Principles of distributed computing PODC '01**

Publisher: ACM Press

Full text available: pdf(898.50 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

The aim of electronic voting schemes is to provide a set of protocols that allow voters to cast ballots while a group of authorities collect the votes and output the final tally. In this paper we describe a practical multi-candidate election scheme that guarantees privacy of voters, public verifiability, robustness against a coalition of malicious authorities. Furthermore, we address the problem of receipt-freeness and incoercibility of voters. Our new scheme is based on the Paillier cryptosystem ...

8 Zero knowledge proofs of identity



U. Fiege, A. Fiat, A. Shamir

January 1987 **Proceedings of the nineteenth annual ACM conference on Theory of computing STOC '87**

Publisher: ACM Press

Full text available: pdf(995.58 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

In this paper we extend the notion of zero knowledge proofs of membership (which reveal one bit of information) to zero knowledge proofs of knowledge (which reveal no information whatsoever). By formally defining this notion, we show its relevance to identification schemes, in which parties prove their identity by demonstrating their knowledge rather than by proving the validity of assertions. We describe a novel scheme which is provably secure if factoring is difficult and whose practicality ...

9 Efficient verifiable encryption (and fair exchange) of digital signatures



Giuseppe Ateniese

November 1999 **Proceedings of the 6th ACM conference on Computer and communications security CCS '99**

Publisher: ACM Press

Full text available: pdf(781.40 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

A fair exchange protocol allows two users to exchange items so that either each user gets the other's item or neither user does. In [2], verifiable encryption is introduced as a primitive that can be used to build extremely efficient fair exchange protocols where the items exchanged represent digital signatures. Such protocols may be used to digitally sign contracts. This paper presents new simple schemes for verifiable encryption of digital signatures. We make use of ...

Keywords: contract signing problem, digital signatures, fair exchange, proof of knowledge, public key cryptography, verifiable encryption

10 Privacy and anonymity: Applications of secure electronic voting to automated privacy-preserving troubleshooting



Qiang Huang, David Jao, Helen J. Wang

November 2005 **Proceedings of the 12th ACM conference on Computer and communications security CCS '05**

Publisher: ACM Press

Full text available: pdf(237.64 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Recent work [27, 15] introduced a novel peer-to-peer application that leverages content sharing aggregation among the peers to diagnose misconfigurations on a desktop PC. This application presents interesting challenges in preserving privacy of user configuration data and in maintaining integrity of troubleshooting results. In this paper, we provide a much more rigorous cryptographic and yet practical solution for preserving privacy, and we investigate and analyze solutions for ensuring integrity ...

Keywords: automatic troubleshooting, homomorphic encryption, integrity, privacy, zero knowledge proof

11 Emerging applications: Almost entirely correct mixing with applications to voting



Dan Boneh, Philippe Golle

November 2002 **Proceedings of the 9th ACM conference on Computer and communications security CCS '02**

Publisher: ACM Press

Full text available: pdf(199.48 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

In order to design an exceptionally efficient mix network, both asymptotically and in real terms, we develop the notion of almost entirely correct mixing, and propose a new mix network that is almost entirely correct. In our new mix, the real cost of proving correctness is orders of magnitude faster than all other mix networks. The trade-off is that our mix only guarantees "almost entirely correct" rather than perfect, i.e. it guarantees that the mix network processed correctly all inputs with high (but not overwhelming) probability.

Keywords: electronic voting, mix networks

12 Concurrent zero-knowledge



Cynthia Dwork, Moni Naor, Amit Sahai

November 2004 **Journal of the ACM (JACM)**, Volume 51 Issue 6

Publisher: ACM Press

Full text available: pdf(316.80 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Concurrent executions of a zero-knowledge protocol by a single prover (with one or more verifiers) may leak information and may not be zero-knowledge *in toto*. In this article, we study the problem of maintaining zero-knowledge. We introduce the notion of an (α, β) *timing constraint*: for any two processors P_1 and P_2 , if P_1 measures α elapsed time on its local clock and P_2 measures β elapsed time on its local clock, then the protocol must be zero-knowledge.

Keywords: Zero knowledge, composition, cryptographic protocols

13 Verifiable encryption of digital signatures and applications



Giuseppe Ateniese

February 2004 **ACM Transactions on Information and System Security (TISSEC)**, Volume 7 Issue 1

Publisher: ACM Press

Full text available: pdf(258.12 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

This paper presents a new simple scheme for verifiable encryption of digital signatures. We make use of a trusted third party (TTP) but in an *optimistic* sense, that is, the TTP takes part in the protocol only if one user cheats or simply crashes. Our schemes can be used as primitives to build efficient exchange and certified e-mail protocols.

Keywords: Certified e-mail, contract signing, digital signatures, fair exchange, proof of knowledge, public-key cryptography

14 Protocols: A verifiable secret shuffle and its application to e-voting



C. Andrew Neff

November 2001

Proceedings of the 8th ACM conference on Computer and Communications Security CCS '01

Publisher: ACM Press

Full text available: [pdf\(216.76 KB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

We present a mathematical construct which provides a cryptographic protocol to *verifiably shuffle* sequence of k modular integers, and discuss its application to secure, universally verifiable, multi-authority election schemes. The output of the shuffle operation is another sequence of k modular integers, each of which is the same secret power of a corresponding input element, but the order of elements in the output is kept secret. Though it is a trivial matter for the "shuffle" ...

Keywords: anonymous credentials, electronic voting, honest-verifier, mix-net, permutation, universal verifiability, verifiable mix, verifiable shuffle, zero-knowledge

15 Credentials: Group signatures with verifier-local revocation



Dan Boneh, Hovav Shacham

October 2004

Proceedings of the 11th ACM conference on Computer and communications security CCS '04

Publisher: ACM Press

Full text available: [pdf\(250.40 KB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Group signatures have recently become important for enabling privacy-preserving attestation in projects such as Microsoft's ngsch effort (formerly Palladium). Revocation is critical to the security of such systems. We construct a short group signature scheme that supports Verifier-Local Revocation (VLR). In this model, revocation messages are only sent to signature verifiers (as opposed to both signers and verifiers). Consequently there is no need to contact individual signers when some u

Keywords: group signatures, revocation, trusted computing

16 Knowledge on the average—perfect, statistical and logarithmic



William Aiello, Mihir Bellare, Ramarathnam Venkatesan

May 1995

Proceedings of the twenty-seventh annual ACM symposium on Theory of computing STOC '95

Publisher: ACM Press

Full text available: [pdf\(1.18 MB\)](#)

Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

17 Short papers: Anonymous yet accountable access control



Michael Backes, Jan Camenisch, Dieter Sommer

November 2005

Proceedings of the 2005 ACM workshop on Privacy in the electronic society WPES '05

Publisher: ACM Press

Full text available: [pdf\(178.78 KB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

This paper introduces a novel approach for augmenting attribute-based access control systems in a way that allows them to offer fully anonymous access to resources while at the same time achieving strong accountability guarantees. We assume that users hold attribute certificates and we show how to exploit cryptographic zero-knowledge proofs to allow requesting users to prove that they hold suitable certificates for accessing a resource. In contrast to the commonly taken approach of sending all p ...

Keywords: access control, accountability, anonymous credentials, anonymous transactions,

certificates, privacy

18 Verifiable partial key escrow



Mihir Bellare, Shafi Goldwasser

April 1997 **Proceedings of the 4th ACM conference on Computer and communications security
CCS '97**

Publisher: ACM Press

Full text available: [pdf\(1.98 MB\)](#)

Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

19 On the limits of non-approximability of lattice problems



Oded Goldreich, Shafi Goldwasser

May 1998 **Proceedings of the thirtieth annual ACM symposium on Theory of computing
'98**

Publisher: ACM Press

Full text available: [pdf\(1.18 MB\)](#)

Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

20 Resettable zero-knowledge (extended abstract)



Ran Canetti, Oded Goldreich, Shafi Goldwasser, Silvio Micali

May 2000 **Proceedings of the thirty-second annual ACM symposium on Theory of computing
STOC '00**

Publisher: ACM Press

Full text available: [pdf\(1.21 MB\)](#)

Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

Keywords: concurrent zero-knowledge, identification schemes, public-key cryptography, smart cards, witness-indistinguishable proofs, zero-knowledge

Results 1 - 20 of 200

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